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PROCEEDINGS OF THE NEW YORK ENTOMOLOGICAL SOCIETY.

MEETING OF OCTOBER 17, 1911.

The regular meeting of the New York Entomological Society was held in the American Museum of Natural History, Tuesday evening, October 7, 1911, at 8.15 P. M., with president Leng in the chair and 17 members present.

Minutes of the previous meeting were read and approved. Mr. Schaeffer, the librarian, reported the receipt of the following publications:

Entomologische Zeitung, 1911, No. 2.

Anales Museo Nacional, Buenos Aires, Serie III, Vol. 13.

Tijdschrift voor Entomologie, 1911, No. 2.

Deutsche Entomologische Zeitschrift, 1911, No. 3.

Bull. Soc. Ent. d'Egypte, 1910, No. 3.

Verh. K. K. Zoo. Bot. Ges. Wien, 1911, Nos. 1 and 2.

41 Annual Rep. Ent. Soc. Ontario, 1910.

Names Applied to Bees of Genus *Nomada*, by T. D. A. Cockerell.

Description of New Hymenoptera, 3, by J. C. Crawford.

New Tropical Millipeds of the Order Merochæta, by O. T. Cook.

Descriptions of New Species of Wasps, by A. A. Rohwer.

Entomologische Beuchten, Vol. III, Nos. 55-60.

Annales Soc. Ent. Belgique, Vol. 54.

Bulletin Lab. Zool. Gen. Agraria, Vol. V.

Wiener Entomologische Zeitung, Vol. XXX, Nos. 4-7.

Entomologische Meddelelser, 1911, April.

Bulletin de la Société Impériale des Naturalistes de Moscou, 1910, Nos. 1-3.

Annales del Museo Nacional de Montevideo, Vol. VII, No. 4.

Bull. Univ. Texas, No. 164.

Deutsche Entomologische Nationalbibliothek, Vol. II, Nos. 11-18.

Descriptions of 1 New Genus and 3 Species of Ichneumon Flies, by H. L. Viereck.

Entomologische Blätter, Vol. VII, Nos. 5-9.

Canadian Entomologist, Vol. XLIII, Nos. 7-10.

Zeitschrift f. wissenschaftliche Insektenbiologie, Vol. VII, 3-9.

Report Ent. Dept. N. J. Agricult. Coll. Exp. Stat., 1910.

Studies in Sawfly Genus *Haplocampe*, by S. A. Rohwer.

Societas Entomologica, XXVI, Nos. 10, 11, 12, 13.

Insektenbörse, Vol. 28, Nos. 19-38.

Entomologische Rundschau, Vol. 28, Nos. 13-19.

Coleopterorum Catalogus, Nos. 32-35.

Memoirs on Coleoptera, II, by Thos. L. Casey.

Mr. Schaeffer also stated that he had received several copies of Major Casey's Memoirs on Coleoptera to be distributed to those members interested. The secretary read a letter from Dr. Crampton, thanking the society on behalf

of the museum for the Zabriskie Collection, also a letter from Mr. Carl Zeimet, tendering his resignation. On motion Mr. Zeimet's resignation was accepted with regrets.

Mr. Grossbeck, chairman of the field committee, reported that sixteen field meetings had been held during the season, but that in all cases the attendance was not as large as desired; and suggested that the number of meetings be reduced and an effort made to secure a larger attendance.

Mr. Schaeffer quoted from some old reports of field meetings to show that then as now the number participating in the field meetings was small.

Mr. Wm. T. Davis read a paper entitled "Notes on the Distribution of Several Species of 'Tiger-Beetles,'" to be published later, and exhibited specimens of *Cicindela puritana* from Chesapeake Beach, Maryland, *Cicindela rugifrons* of the spotted variety from an old gravel quarry at Hyattsville, Maryland, *Cicindela sexguttata* found associated with *rugifrons* in a pine barren area at Jamesburg, N. J., *Cicindela unipunctata* from Ridgeway, N. J., and a single female specimen of *Tetracha virginica* found Sept. 8 near Central Park, Long Island, N. Y., on an uncultivated part of the natural prairie. These specimens were all collected during 1911.

Mr. Drury stated that he had taken *Tetracha virginica* on a sand bar along the Ohio River, near Cincinnati, under material and rubbish left by campers.

Mr. Engelhardt reported the capture of *Cicindela lepida* at Rockaway. They were found only on the first row of sand dunes.

Mr. Schaeffer commented on several species of insects, including a number of Diptera, which he exhibited, some of the interesting species among those shown were: *Hirnoneura flavipes* Will., *Rhynchocephalus sackenii* Will., *Rhynchocephalus subnitens* Coq., *Systropus* sp., *Midas cleptea*, *Eccritosisia amphinoma* Walk., *Erax* sp., and several new species of *Asilus*, all from Huachuca Mts., Arizona, or Beaver Creek Hills, Utah, and the hemipteron *Zelus rubidus* Stoll. from Brownsville, Texas, new to our list.

Mr. Drury spoke briefly of his experience in collecting in the south and of the severe cases of poisoning he had received from poison ivy, and his experience in dealing with it.

The discussion concerning poison ivy and its treatment was participated in by several of the members.

Mr. Dow exhibited a species of *Trogosita* similar to *virescens*, some 40 specimens of which he had received from Arizona. They differed from *virescens* in lacking the sulcation in the dorsal surface of the head and in the pittings of the elytra.

Mr. Mitchell stated that in studying spiders he had found difficulty in preserving shape and color in either alcohol or formaldehyde or glycerine. He had been experimenting in using a tube with a low vacuum and had found that by getting the proper amount of pressure and adding formaldehyde gas he obtained fairly good results.

Two spiders and a caterpillar preserved in this manner were exhibited.

MEETING OF NOVEMBER 7, 1911.

A regular meeting of the New York Entomological Society was held in the American Museum of Natural History, November 7, at 8.15 P. M. In the absence of the president, the chair was occupied by the vice-president, Dr. Osburn, with 9 members and 6 visitors present.

Minutes of previous meeting read and approved.

Mr. Pollard extended an invitation to the members to attend Dr. Crampton's lectures to be given at the Brooklyn Institute.

Dr. Southwick spoke of the recent death of Dr. Henry McCook.

Under scientific discussion Mr. Grossbeck spoke of his trip with Mr. Dow to Jamaica. Kingston was reached on the 21st of February and the first few days were spent collecting in the vicinity of this place. Port Royal proved an excellent locality not only for insects but for other invertebrates. Later, Cinchona, situated in the Blue Mountains at an elevation of nearly 6,000 ft., was visited. At this altitude few insects were on the wing but many specimens were taken by beating and sweeping, but particularly in old wood. An interesting feature in the ascent was the change in the vegetation from a purely tropical one of palms, bananas, cacti and the like to a temperate one consisting of white clover, wild carrot, strawberry, pine trees, etc. A tree-fern forest on one of the highest peaks of the mountain also produced some interesting forms. Over two weeks were spent at Montego Bay and vicinity in the western part of the island. In general, collecting was not of the best. While at Cinchona it rained every day. In the lowlands it was extremely dry, being at the height of the dry season. However, about 3,000 insects and 1,000 other invertebrates were taken. Among the interesting material taken were some termite tree nests.

Dr. Osburn asked concerning the material of which the nest was made and whether the galleries were impervious to rain.

Mr. Grossbeck stated that the nests were very hard, save for the external covering, which was very brittle. He believed the galleries would not be destroyed by rain.

Mr. Dow said that the butterfly *Papilio homerus* was spreading on the island as was also its food plant, a species of *Hibiscus*. One collector had obtained a number of larvæ in April. Concerning the plants Mr. Dow stated that some species such as chickweed, carrot, parsnip and strawberry, if not the same as our species very closely resemble them and that one of the commonest orchids was also common in China. As there was an experimental garden on the island it was possible that certain foreign species of plants had escaped from it.

MEETING OF NOVEMBER 21, 1911.

The regular meeting of the New York Entomological Society was held in the American Museum of Natural History, November 21, at 8.30 P. M., with president Leng in the chair and 19 members and 2 visitors present.

Minutes of the previous meeting read and approved. Mr. Schaeffer, the librarian, reported the receipt of the following publications:

Verhandlungen d. k. k. zool. bot., Gesellschaft in Wien, Vol. LXI, Nos. 5 and 6.

Wiener Entomol. Zeitung, Vol. XXX, No. 8.

The Canadian Entomologist, Vol. XLIII, No. 11.

Bull. de la Société Entomol. d'Egypte, 1910, No. 4.

Entomologische Blätter, Vol. VII, Nos. 10 and 11.

Zeitschrift f. wiss. Insektenbiologie, Vol. VII, No. 9.

Deutsche Entomol. Nationalbibliothek, Vol. 2, No. 2.

Mittheilungen Zool. Mus. Berlin, Vol. V, No. 3.

He stated that he had been arranging the publications of the society, grouping the various kinds together so as to be more accessible to the members.

Under scientific discussion Mr. Leng read an article on "Collecting Beetles in Georgia." In July, 1910, he made his second trip in company with Mr. Davis to northern Georgia, and spent two weeks mostly in the vicinity of Clayton and including a four days' trip to Ransom's Mill. The altitude was about 2,000 feet with the mountain ridges extending 3,700 feet. The season was a good one and some 600 species of Coleoptera were taken, but owing to the fact that it was later in the year than when the first trip was made about 250 species were different from those taken the first time.

Among the interesting forms taken were *Amphicoma* sp., *Cychrus andrewsii*, *C. bicarinatus*, *C. canadensis*, *C. violaceus* (1 specimen), *Carabus limbatus* and other large Carabidæ in traps, *Carabus limbatus* being uniformly smaller than those taken in the north, *Pterostichus acutus*, *Serica* n. var., *Agrilus fuscipennis*, *Lactica iris* and *Lema solani*.

Mr. Shoemaker exhibited some Arizona beetles collected by his brother while in the Indian service. They were from the arid regions of Arizona and there were some fifty species shown, including several Tenebrionidæ. Photographs of the regions were also shown.

Mr. Leng, who in company with Dr. Lutz and Mr. Davis, had just returned from a collecting trip to Florida, commented briefly upon the trip.

They had gone to Florida, November 1, going to Jacksonville first. Mr. Leng and Mr. Davis remained here three days. Dr. Lutz went on down the east coast. Around Lakeland they found a varied country with sand hills, and many lakes with steep sides. A number of species of trees were noted, such as oaks, pines and magnolias, and here they had fair success in light collecting.

At Punta Gorda many kinds of oaks were noted and beyond this toward the gulf shore the country was found to be very level, with pine trees for many miles. Good sweeping was done in low places and sifting in debris on the beach. Somewhat back from the shore a mixture of mangroves and other trees were found and some good species were obtained here by beating.

Dr. Lutz showed some illustrated postal cards of many of the places and spoke briefly of Fort Myers and the other places he had visited.

Mr. Leng said that on trees peculiar to Florida, peculiar insects were found but under the same conditions as existed in the north similar insects occurred. Further, that of the species taken at Clayton, 5 per cent were different from

those found around New York and half the species taken in Florida were different from those around New York and they would be equally so to a Georgia collector, unless from southern Georgia. One should not look under ordinary conditions if they were seeking peculiar species but under peculiar sub-tropical conditions.

Mr. Rolfs, of the Florida Experiment Station, had pointed out that the scattered distribution of tropical plants occurred in restricted areas. One would have to collect in many places to obtain the different desirable species.

Mr. Davis spoke of light collecting at Punta Gorda. Two species of Conocephalids were taken on Palmetto. They were very much alike but there was a distinct difference in their song and one was more difficult to capture than the other.

MEETING OF DECEMBER 5, 1911.

A regular meeting of the New York Entomological Society was held in the American Museum of Natural History, December 5, at 8.30 P. M., with president Leng in the chair and 18 members present.

Minutes of previous meeting read and approved.

Dr. Osburn, chairman of the photograph committee, reported receipt of Mr. Pollard's photograph.

Under scientific discussion Mr. Davis gave some interesting notes on Georgia insects and exhibited a box of the species discussed.

Mr. Schaeffer spoke on the "Genera of the Coleopterous Family Temnochilidæ." He said there had been much changing of names in the Coleoptera, especially in Europe, and the name Temnochilidæ was generally used now for the old family Trogositidæ. Several classifications for the family had been suggested. LeConte and Horn had recognized two tribes only while Reitter had divided the family into four tribes.

Mr. Schaeffer discussed the characteristics of the various genera and told something of their habits. A box of the North American species representing the genera of this family was exhibited.

Mr. Grossbeck spoke of a beetle hunting wasp which he had observed at Yaphank, L. I. The species belonged to the genus *Cerceris* and had made burrows $\frac{3}{4}$ inch in diameter and $4\frac{1}{2}$ -6 inches deep, extending at an angle to the surface. In many cases a Buprestid beetle, which had been collected by one of the bees, was found near the entrance of the burrow. Specimens of the insects and collected beetles as well as a photograph of the burrows taken by Mr. Davis were shown.

Dr. Osburn spoke on the "North American Species of *Brachypalpus*." About 15 species were recognized of this Syrphid genus which was described in 1834. Of these the following had been found in North America:

Brachypalpus frontosus Loew., occurring as far south as Georgia and the best known although not common.

B. rileyi Will., recorded from North Carolina, Ohio and New Jersey.

B. parvus Will., recorded from California, and specimens shown taken in British Columbia. The above species lack the brilliant colored band on the abdomen which are found in the following two:

B. pulcher Will., recorded from Washington and Oregon and taken by Dr. Osburn in British Columbia.

This species hibernates in the adult stage.

B. sorosis Will., recorded from Georgia and New Jersey and specimens received from Idaho.

These species were shown together with a new species which Dr. Osburn had taken in British Columbia.

Mr. Schaeffer reported the capture of *Proctacantha nigriventris* Macq. at Lakehurst, N. J., and *Trechus chalybeus* Mann. at Bellport, L. I., the latter taken by Mr. A. Nicalay.

Dr. Felt spoke on the habits and characters of *Miastor* and *Oligarces* and showed some living *Miastor* larvæ, several microscopic slides and photomicrographs.

The eggs produced by these flies were comparatively very large.

In the case of *Miastor* the larvæ occurred in large numbers. Near Lake Placid a strip of bark 6 inches long and 3 inches wide had been removed and from one thousand to two thousand specimens found.

They had been noted under decaying bark of beech, birch and chestnut. From five thousand to ten thousand flies had been reared in the laboratory. *Oligarces* larvæ had been found under the thick bark of elm, but had not been noted in masses.

Larvæ of both these genera had certain enemies. In the case of the *Miastor*, larger dipterous larvæ had been found among the masses apparently feeding on them.

MEETING OF JANUARY 2, 1912.

The annual meeting of the New York Entomological Society was held in the American Museum of Natural History, January 2, at 8.15 P. M., with president Leng in the chair and 19 members present.

Minutes of December 5 and December 19 read and approved.

Dr. Lutz, curator, reported briefly on the collections, mentioning especially the acquisition of the Zabriskie and Seiffert collection.

Mr. Schaeffer reported that all the regular exchanges had been continued through the preceding year.

Brief reports were also received from the field committee, publication committee and delegate to the New York Academy. Mr. G. W. J. Angell, of the nominating committee, presented the following report:

President: Raymond C. Osburn.

Vice-President: Chas. L. Pollard.

Secretary: Chas. W. Leng.

Treasurer: Wm. T. Davis.

Librarian: John A. Grossbeck.

Curator: F. E. Lutz.

Executive Committee: G. W. J. Angell, C. W. Leng, E. G. Love, Chas. E. Sleight, H. G. Barber.

Publication Committee: F. E. Lutz, Chas. Schaeffer, R. C. Osburn, W. M. Wheeler.

Auditing Committee: C. F. Groth, Edward D. Harris, E. L. Dickerson.

Field Committee: Geo. P. Engelhardt, John A. Grossbeck.

Delegate to New York Academy of Science: E. B. Southwick.

On motion the secretary cast the ballot for the nominations presented.

Moved and carried that a vote of thanks be extended to the retiring president, Mr. Leng.

Under miscellaneous business Mr. Barber requested that the members present more short notes for publication.

Mr. Comstock reported the capture of *Erebus odora* at Hoboken.

Moved by Mr. Dow that a committee of two be appointed to confer with a similar committee from the Brooklyn Entomological Society to arrange for the annual dinner. The president appointed Mr. Engelhardt and Dr. Lutz.

Mr. Harvey Voss, of Paterson, was proposed for membership by Mr. Grossbeck and on motion elected as member.

Mr. Leng, the retiring president, presented an interesting paper on the "Geographical Distribution of the Cicindelidæ of the Eastern United States."

Mr. Pollard gave some notes on the psychology of the "Baldfaced Hornet." While camping in the Ramapo Mts., near Bear Swamp, last July, in company with Mr. Sleight, Mr. Pollard said he had an opportunity to observe *Vespa maculata* capturing insects, and to experiment with it. The wasps were first noticed capturing some collected noctuids which were lying on the table. This insect would circle around the table and then dart directly down at a moth. In some cases at least their vision was poor, as flies quite near them would not be captured, while the wasps could be misled by dark spots of bits of mud substituted for the insects.

Other insects were tried and when found too heavy, the wasps would take part at a time (as in the case of the butterfly *Argynnis aphrodite*), first the wings and then the body.

When pinned insects were tried on the wasps they would in like manner take first one part and then another, cutting off the body close to the pin.

A Lycosid spider and a hornet were placed together. They attacked each other and the following morning the hornet was found to be dead. When a hornet and bumble bee were placed together, however, no results were obtained.

Mr. Davis stated that Mr. Sleight and he had made similar observations. They had observed *Vespa maculata* dart at flies on the side of a tent but at other times go very close to the flies without capturing them. He had also observed them feeding on other *Vespa*.

Dr. Lutz moved that a vote of thanks be extended to Mr. Schaeffer for his services as librarian.

Dr. Osburn stated that only a single species of crayfish—*Cambarus bartoni*—had been noted heretofore from this locality, but recently in examining some specimens collected for the aquarium from Prospect Park and Central Park lakes it was noted that there was a different species, *Cambarus limosus*, and this was found to be abundant.

Ortmann in his paper on the crayfish states that it occurs in the Delaware,

Potomac and other drainage systems. It would be interesting to know how it became established here and Dr. Osburn urged that the members look for it in other localities.

MINUTES OF MAY 21, 1912.

A regular meeting of the New York Entomological Society was held May 21, 1912, in the American Museum of Natural History, at 8.15 P. M., president Dr. Raymond C. Osburn in the chair and 23 members present.

The librarian reported that the arrangement of back volumes of JOURNAL is completed, the arrangement of separates nearly completed and catalogue of Society's books well in hand. He stated that 97 complete sets, Volumes I to XIX, were on hand.

The librarian also reported the books received during March, April and May as follows:

By Exchange.

- Insectenbörse, Nos. 6, 8, 9, 15, 16, 17, 18, 1912.
Entomologische Rundschau, Nos. 3, 4, 1912.
Bull. de la Societé Entomologique d'Egypte, 1 fasc., 1911.
Canadian Entomologist, No. 3, 1912.
Entomologische Mitteilungen, Nos. 3, 4, 5, 1912.
Entomologische Zeitschrift, Nos. 1, 2, 3, 4, 5, 1912.
Entomologische Blätter, Nos. 3, 4, 5, 1912.
Wiener Entomologische Zeitung, No. 2, 1912.
Mitteilungen der Schweizerischen Entomologischen Gesellschaft, No. 3, 1912.
The Sarawak Museum Journal, No. 1, 1911.
Mitteilungen aus dem Naturhistorischen Museum in Hamburg, No. 2, 1910.
Annales de la Societé Entomologique de Belgique, 1911.
Jahresbericht des Westfälischen Provinzial-Vereins für Wissenschaft und Kunst, 1911.
Entomologische Monatsblätter, Vols. I and II.
Beschreibung neuer Nitiduliden (Reitter).
Systematische Einteilung der Trogositidæ (Reitter).
Verzeichniss der von Herrn H. Leder in Russisch-Georgien gesammelten coprophagen Lamellicornien (Harold).
Die Europäischen Nitidularien (Reitter).
Revision der Europäischen Cryptophagiden (Reitter).
Monograph der Eurychoriden (Haag).
Revision der Meligethes-Arten (Reitter).
Die Otorhynchiden (Seidlitz).
Wiener Entomologische Monatsschrift, Vols. I, II, V, VII and VIII.
Deutsche Entomologische Zeitung, pt. 4, 1911, pt. 1, 1912.
Berliner Entomologische Zeitung, pts. 3 and 4, 1911.

By Gift.

- Monthly Bulletin State Commission of Horticulture (Sacramento, Calif.),
Nos. 1, 2, 3, 1911 and 1912.

Descriptions of New Hymenoptera (Crawford).

Descriptions of New Species and Genera of Lepidoptera chiefly from Mexico (Dyar).

A New Species of *Celithemis* (Williamson).

By Purchase.

Coleopterorum Catalogus: Cerambycidae, Cerambycinae. Staphylinidae III. Ptinidae.

Mr. Angell gave notice of his intention to move to amend the by-laws by striking out of Article IX the words "he shall publish in each JOURNAL a list of additions obtained during the previous quarter."

Dr. Osburn read a "Review of Walker's Monograph of North American *Aeshnas*" and exhibited his own and Mr. Davis's collection of these dragon flies. He said that this volume, devoted to a most thorough study of 14 species and 6 varieties, was a grand piece of work, in which the material in the museums of Canada, United States and foreign countries as well as in private collections was reviewed, and the species were described from every point of view. The larval forms, the season and length of imaginal life, the habitat, influence of weather, enemies, food, eggs, hatching, habits, etc., were all exhaustively treated. The data for migration few, one in America, one in Europe; the data for seasonal variation in number, for the eight stages of nymphal growth, for the length of nymphal life, placed at three years, for symbiosis, are all equally complete. There is a phylogenetic tree of genera, keys for determining males, females and nymphs and 130 pages devoted to complete descriptions and citations, 11 pages of bibliography, 28 plates, of which 6 are colored. Dr. Osburn added that five new species had been described in a preliminary paper and the nymphs of 4 species remained unknown; also that *verticalis* is not a common species as had been supposed.

The collection exhibited by Dr. Osburn was identified by Walker and in Mr. Davis's collection of 9 species there were three not included in Dr. Osburn's personal collection.

Mr. Engelhardt asked if specimens found in March had probably emerged so early in the season. Dr. Osburn said they had and that the species seen flying was probably *Anax junius*. Mr. Leng asked about the distribution, which Dr. Osburn said was palæarctic.

Mr. Schaeffer remarked that there were none in the arid southwestern regions, though some occurred in the mountains.

Mr. Engelhardt spoke of the hemipteron *Corynocoris typhaeus* as an occasional carrion feeder.

Mr. Pollard reported having found, while with Mr. Bischoff at Ramsey, N. J., a *Calligrapha* similar to *C. amelia* Knab abundant on alder and commented on the remarkable difference in the sexes.

Mr. Hall presented *Arctia figurata* found at Runyon, N. J., May 19, to the local collection.

Mr. Shoemaker presented *Onthophagus nuchicornis* and *Sphæridium bipustulatum*, found near East New York on May 4 and May 20.

Dr. Lutz then opened the Symposium on the Insects of Florida by stating the problems that were presented, *i. e.*, the relations between its insects and those of more northern regions and of Cuba, between the insects of its own northern and southern halves and the bearing of the causes that have been suggested to explain the relation, the frost line for instance, the possibility of a common relation with Central America, giving the opposed views of various authors. He referred also to the differences in Florida itself caused by varied environments and to the unexpected distribution of some Florida creatures with the explanations thereof suggested by Scharff, including former land bridges. He closed without expressing any personal opinion, but by asking what effect, if any, on color and structure could be traced to the Florida climate.

Mr. Davis, speaking briefly, favored accident rather than supposed land bridges as an explanation of the distribution of many species.

Dr. Osburn instanced the lung fishes as another case of remnant survival in three widely separated regions.

Mr. Schaeffer also favored accident as a satisfactory explanation for most of the Coleoptera common to Florida and West Indies, mainly Carabidæ and wood-boring species carried ashore by accident.

Mr. Leng, speaking of the Coleoptera, said that much work needed to be done on Floridian and West Indian species before comparisons could effectively be made, but that as far as the facts were known the beetles of northern Florida were largely slightly modified forms of the species occurring northward, but with a not inconsiderable element peculiar to the state. In southern Florida, where a more or less patchy subtropical vegetation is established, less than 10 per cent. of the species are common to Florida and the West Indies. The beetles caught by Mr. Davis in November were used to illustrate these remarks. Mr. Grossbeck, speaking of the Lepidoptera, said that among the strong flying Sphingidæ, many species were common to Florida and the West Indies, but otherwise the relation was strong between the Floridian and northern faunas. As to the total number of species Mr. Grossbeck said that while the existing information might be regarded as practically complete for macro-lepidoptera, large additions could be expected in micros.

Mr. Barber read a carefully prepared paper on the Hemiptera, which will later be published in full. He said the species now recorded number 311 against 405 for New Jersey and 345 for Colorado. Omitting the 46 species of the Capsidæ, the remaining 275 divided into 7 groups:

1. 32 indigenous to Florida.
2. 23 common to Florida and West Indies.
3. 54 common to Florida, Mexico and Central America.
4. 48 common to Florida, Gulf States, Mexico and Central America.
5. 38 common to Florida and Southern States.
6. 55 common to Florida and United States, of which 19 are widely distributed.
7. 6 cosmopolitan species.

Mr. Barber mapped on the blackboard the distribution of the Chinch Bug

as given by Webster, following the Mississippi Valley northward, and again following the shores of the Gulf of Mexico eastward and then proceeding north by the Atlantic Coastal Plain.

In closing, Mr. Barber pointed out that the species common to Florida and West Indies are mainly confined to the southern half of the state and strongly favored the theory of their introduction by prevailing winds. Mr. Comstock, speaking of Lycænidæ said that out of 20 species, one was peculiar to Florida, eight common to Florida and West Indies, eight common to Gulf States and Florida, six common to Atlantic States and Florida, but that difficulties of nomenclature made the comparison somewhat uncertain.

Mr. Sherman said that among the Dytiscidæ 1 or 2 species might be peculiar to Florida but the great bulk were species distributed generally over the Southern States.

Mr. Davis, speaking of the Orthoptera, said the number already known, 172, exceeded by 19 the records for New Jersey, and would probably reach 225 when complete. Some of these are peculiar to Florida, but the distribution is too imperfectly known to venture any comparison. Mr. Davis referred to the strong mandibular development of the species *Belocephalus* eating the tough palmetto leaves, and said he could personally bear witness to their ability to also take a nip out of the incautious collector. He also exhibited leaves of turkey-oak (*Quercus catesbæi*) brought home last November and containing larvæ which mined the leaves, and by swishing their body rapidly produced a sound by which their presence was detected, and two specimens of the buprestid beetle *Brachys ovata* which had since emerged. Mr. Davis, being directly questioned, declined to make any comparison between the insects of northern and southern Florida until the collections recently made by himself and Mr. Grossbeck were worked up, but pointed out that as the belt of sub-tropical vegetation observed at Punta Gorda became broader southward, an increase in such subtropical forms as the little green cricket *Cyrtoxipha* might reasonably be expected.

There then followed a general discussion of the topic.

Mr. Grossbeck mentioned the broad mangrove growth, the dagger palms, the Spanish bayonets, etc., in parts of southern Florida, but the remarkable sameness of the Lepidoptera and Cerambycidæ with northern Florida forms.

Mr. Leng spoke of the currents in the Gulf of Mexico being unfavorable to distribution by drift from Yucatan via Cuba to Florida.

Mr. Franck referred to the erratic distribution of some species of Lepidoptera and both he and Mr. Grossbeck discussed the difficulty in comparison introduced by equally erratic nomenclature.

Mr. Schaeffer said that apparent difficulties in erratic distribution sometimes disappeared after more thorough collecting. Many insects are short-lived and insistent upon certain environment, and unless all conditions are fulfilled may easily be missed even by conscientious carefully trained collectors. He gave an instance in a Mexican species of *Onthophagus* recently found at Prescott, Ariz., though he and other collectors had failed to find it in the Huachuca Mts. and other places much nearer the border.

Mr. Comstock said that among the West Indian Islands there were cases of each locality having a named local race, though in fact all were one species.

Dr. Osburn referred to his own experiences on the Tortugas when during severe storms it was usual to find Cuban species blown across the intervening 90 miles of water. Dragon flies for instance would be found though there was no standing water in which they could possibly have bred. Similarly in our Western States, much accidental distribution is undoubtedly effected by cyclones.

Mr. Schaeffer said it was doubtful if such accidents could be considered in the case of Coleoptera, which are usually not sufficiently strong fliers.

Mr. Davis referred to the accidents by which certain shells have been recently remarkably distributed on the Atlantic coast, and suggested that in the fullness of geologic time such accidents might account for much apparently erratic distribution.

Dr. Lutz and Dr. Osburn pointed out that in the case of alligators and lung fishes, the evidence of fossils made refuge in accident unnecessary.

Dr. Osburn also instanced the remarkable distribution of the dragonfly, *Argia vivida*, common in New Mexico and Old Mexico and occurring again in a very limited way at certain hot springs in Montana and Alberta. It does not fly readily, but hides in the reeds. If not formerly more widely distributed it is difficult to account for its persistence about these hot springs.

Dr. Lutz asked if it might possibly be a case of polyphyletic origin, but Dr. Osburn thought not.

Mr. Wintersteiner stated that Dr. Sharp in his revision of the species included in the genus *Tropisternus* found it impossible to separate our *limbalis* Lec. specifically from *dorsalis* Brullé, occurring in North and South America; the latter name should therefore be used. Also that our *nimbatus* Say is to be regarded as a synonym of *lateralis* Fab.

Mr. Wintersteiner also spoke of one of the specimens collected by Mr. Davis in Florida as probably representing an undescribed species, allied to *striolatus*, in which the upper surface of the hind tibiæ is destitute of ciliæ or swimming hairs.